

LENGTH OF PRG 00232

00024	1		IDENT	TIMER		
	2	*	TIMQMAX	EQU	20	
00000 P	3		ENTRY	CLOKIN	MAXIMUM NUMBER OF THINGS THAT	
00115 P	4		ENTRY	DATEB.1	WILL EVER BE QUEUED AT ONCE	
00156 P	5		ENTRY	HOUR		
00052 P	6		ENTRY	HOURUP		
00136 P	7		ENTRY	TIMSET		
00030 P	8		ENTRY	TIMEKILL		
00157 P	9		ENTRY	TOMORROW		
	10	*				
	10+001		EXT	DAYSCHO		
	11		EXT	FCLIST		
	12		EXT	FLAGS		
	13		EXT	HOURBIT		
	13+001		EXT	LATEFLAG		
	14		EXT	PAGETIME		
	15		EXT	NPAGESM1		
	16		EXT	RETURN		
	16+001		EXT	SCHDTAB		
	16+002		EXT	RATETAB		
	16+003		EXT	SHIFTRAT		
	17		EXT	SYSERR		
	18	*				
00022	19	*			REGISTER FILE LOCATIONS	
	20		CLOCK	EQU	CONTAINS THE NUMBER OF MILLI	
	21	*			SECONDS PAST THE HOUR	
00032	22		CLOCKLIM	EQU	CONTAINS THE NEXT INTERRUPT TIME	
00037	23		DATE	EQU	CONTAINS HOUR, DAY, MONTH, YEAR	
	24	*			BITS 00-04 CONTAIN THE HOUR	
	25	*			BITS 05-09 DAY OF THE MONTH	
	26	*			BITS 10-13 NUMBER OF THE MONTH	
	27	*			BITS 14-20 CONTAIN (YEAR-1900)	
	28	*			BITS 21-23 ARE RESERVED	
07773	29	*				
07774	30		DINT	EQU	7773B	
	31		EINT	EQU	7774B	
	32	*				
00000	33		IMPURE	EQU	0	INDICATES IMPURE CODE
00001	34		X1	EQU	1	
00002	35		X2	EQU	2	
00003	36		X3	EQU	3	

39 *
40 * THIS SECTION PROCESSES CLOCK INTERRUPTS.
41 * WHEN A CLOCK INTERRUPT OCCURES, CONTROL PASSES TO CLOKIN.
42 * IF THERE IS AN ELAPSED REQUEST IT IS REMOVED AND CALLED
43 * WITH A UP. THE RETURN ADDRESS IS IN X3 BUT THE RETURN
44 * MAY BE MADE TO INTSORT (WHICH IS SLOWER.)
45 * IF THERE ARE NO ELAPSED REQUESTS, THE INTERRUPT IS
46 * CLEARED AND THE NEW CLOCK LIMIT PLACED IN CLOCKLIM (RF 32B).
47 *

00000	77740080	49	*				
00001	14300000 P	50	CLOKIN	VFO	A12/EINT	HELP STAMP OUT RED LIGHTS.	
00002	53020022	51	ENI		CLOKIN,X3	TRY TO COME BACK HERE.	
00003	77730000	52	TMA		CLOCK		
00004	21000162 P	53	VFD		A12/DINT	GET SOME PEACE AND QUIET.	
		54	NEXTINT	LDQ	TIMQUEUE+IMPURE	LOAD THE NEXT INTERRUPT TIME.	
		55	*			NOTE THAT THERE WILL BE AT	
		56	*			LEAST ONE QUEUED INTERRUPT (FOR	
		57	*			TIMOUR) AT THIS POINT.	
00005	15600001	58	INA		1		
00006	03600012 P	59	AQJ, GE		CLOTH		
00007	77500400	60	INCL		0400B	CLEAR INTERRUPT CONDITION	
00010	53410032	61	TGM		CLOCKLIM		
00011	01077777 X	62	UJP		RETURN		
		63	*				
00012	54200004 P	64	CLOTH	LDI	NEXTINT,X2	POP THE INTERRUPT FROM THE STACK.	
00013	15277775	65	INI		-2,X2		
00014	47200004 P	66	STI		NEXTINT,X2		
00015	01600003	67	UJP,I		2+1,X2	FOLLOW THE INTERRUPT ADDRESS.	

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70   *
71   *
72   *
73   * THIS ROUTINE IS FOR THE PURPOSE OF REMOVING QUEUED REQUESTS
74   * FOR INTERRUPTS FORM THE CLOCK QUEUE. TO CALL IT, LCAQ
75   * THE A REGISTER WITH THE NUMBER WHICH WAS IN THE Q REGISTER
76   * WHEN TIMSET WAS CALLED. THE UPPER SIX BITS ONLY ARE USED
77   * TO SEARCH FOR THE CORRESPONDING REQUEST. REQUESTS WHICH
78   * HAVE ZERO IN THE UPPER SIX BITS SHOULD NEVER BE KILLED.
79   * TO CALL THE ROUTINE, EXECUTE AN
80   * RTJ TIMEKILL KILL THE REQUEST
81   * WITH THE INTERRUPTS DISABLED.
82   *
83   * THE NUMBER OF MILLISECONDS BEFORE THE REQUEST WOULD HAVE
84   * BEEN PROCESSED IS RETURNED IN THE A REGISTER.
85   * ALL INDEX REGISTERS ARE RETURNED UNCHANGED.
86   *
87   * NO CHECK IS MADE TO CHANGE CLOCKLIM (RF 328) IF THE REQUEST
88   * KILLED WAS THE CURRENT ONE. AT WORST, THE INTERRUPT WILL
89   * HAPPEN AND BE IGNORED BY CLOKIN. MORE LIKELY, A NEW INTERRUPT
90   * WILL BE REQUESTED BEFORE THE NEXT CLOCK INTERRUPT.
91   *
92   * ****
93   *
94   * 00016 25100162 P   94   TIMKLOOP LOAQ   TIMQUEUE,X1
95   * 00017 45100160 P   95   STAQ    TIMQUEUE-2,X1
96   * 00020 10100000      96   TIMKSPOT ISI    IMPURE,X1
97   * 00021 02100016 P   97   IJI     TIMKLOOP,X1
98   * 00022 53020022      98   TMA     CLOCK
99   * 00023 16477777      99   XOA,S   -0
100  * 00024 30000160 P   100  ADA     TIMTEMP
101  * 00025 05400000      101  ASG,S   0
102  * 00026 14600000      102  ENA     0
103  * 00027 14100000      103  TIMKSAVE ENI   IMPURE,X1
104  * 00030 01000000      104  TIMEKILL UJP   IMPURE
105  * 00031 47100027 P   105  TIMEKILL UJP   ENTER HERE
106  * 00032 54100004 P   106
107  * 00033 15177775      107  STI     TIMKSAVE,X1
108  * 00034 47100004 P   108  LDI     NEXTINT,X1
109  * 00035 15177621 P   109  INI     -2,X1
110  * 00036 47100020 P   110  STI     NEXTINT,X1
111  * 00037 21000046 P   111  INI     4-TIMQUEUE,X1
112  * 00038 47100020 P   112  STI     TIMKSPOT,X1
113  * 00039 21000046 P   113  LUQ     TIMKMASK
114  * 00040 37000046 P   114  LPA     TIMKMASK
115  * 00041 05200163 P   115  MEQ     TIMQUEUE+1,2
116  * 00042 00777777 X   116  RTJ     SYSERR
117  * 00043 20100162 P   117  LDA     TIMQUEUE,X1
118  * 00044 40000160 P   118  STA     TIMTEMP
119  * 00045 01000020 P   119  UJP     TIMKSPOT
120  * 00046 77000000      120
121  * 00047 77000000      121  TIMKMASK OCT   77000000

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123   *
125   *
126   *
127   *
128   * THIS ROUTINE SETS THE CLOCK QUEUE BACK ONE HOUR AT THE
129   * END OF EACH HOUR. THIS KEEPS THE REALTIME CLOCK (RF 22B)
130   * FROM OVERFLOWING.
131   * ALSO, IT UPDATES THE DATE RF WORD (RF 37B) AND OTHER TIME
132   * WORDS.
133   *

135   *
136   * TIMHOUR EQU   *
137   ENA   HOURBIT
138   RAD   FLAGS
139   UJP   0,3      SET BIT THAT SEZ...
140   *          ...TO DO THE END OF HOUR...
141   HOURUP EQU   *
142   ENI   NPAGESM1,X1
143   LDA   PAGETIME,X1
144   SHA   -1      ADJUST SCHEDULR PAGE TIME
145   STA   PAGETIME,X1
146   IJD   *-3,X1   WORDS
147   *          (THESE WORDS RANGE FRGM 1 TO 2
148   LOI   FC LIST,X2
149   LCA   HOUR
150   LDI   NEXTINT,X1
151   ISG   TIMQUEUE,X1
152   UJP   FC02    ...HOURS SO THAT A SHA -1
153   RAD   0,X1    ...EFFECTIVELY SUBTRACTS AN HOUR
154   INI   -2,X1   ADJUST CLOCK INTERRUPT TIMES.
155   UJP   TIMHQ   READY THIS FOR LATER.
156   *          - ONE HOUR
157   FC01  LDAQ   0+1,X2
158   SHO   -1      ADDRESS OF LAST INTERRUPT
159   STQ   1+1,X2
160   TAI   X2
161   FC02  IJD   FC01,X2
162   *          SKIP IF NOT DCNE
163   TMA   CLOCK
164   SBA   HOUR
165   TAM   CLOCK
166   XOA,S -0      SUBTRACT AN HCUR...
167   ADA   HOUR
168   ENQ   TIMHOUR
169   TIM   CLOCKLIM,0
170   RTJ   TIMSET
171   *          ...FROM THE CLOCK
171+001 TMQ   DATE
171+002 INQ   1      GET TIME LEFT UNTIL NEXT HOUR.
171+003 DATEBACK TQM   DATE
171+004 RTJ   SHIFTRAT
171+005 LDA   RATETAB,X1
171+006 SHA   -3      CALCULATE SHIFT RATES
171+007 SWA   LATEFLAG
171+008 QSG   24
177   UJP   CLOKIN
177+001 DATEB.1 ENI   IMPURE,X3
177+002 ISI   6,X3
177+003 NOP   0      SKIP IF DAY CHANGED
177+004 SII   DATEB.1,X3
177+005 LDA   SCHDTAB,X3
177+006 STA   DAYSCHD
177+007 LDQ   TOMORROW
179   UJP   DATEBACK

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10 00120 47300115 P 177+004 PUT BACK FOR NEXT DAY
 00121 20377777 X 177+005 GET THE SHIFT SCHEDULE FOR NEXT D
 00122 40077777 X 177+006 PUT AWAY FOR ACCOUNTS.
 00123 21000157 P 177+007 GET TOMORROW TO MAKE TODAY
 00124 01000106 P 179 (SETUP BY INITIAL)

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182 *
183 *
184 *
185 * THIS ROUTINE WILL SCHEDULE A CLOCK INTERRUPT REQUEST.
186 * TO CALL IT, PUT THE NUMBER OF MILLISECONDS INTO THE A
187 * REGISTER, THE ADDRESS TO BE CALLED INTO THE ADDRESS OF Q,
188 * AND THE REQUEST NUMBER INTO THE UPPER SIX BITS OF Q
189 * (IF THE REQUEST MAY NEED TO BE KILLED). BITS 17-15 MUST
190 * BE ZERO. THEN DISABLE THE INTERRUPTS AND EXECUTE AN
191 *
192 * RTJ      TIMSET
193 *
194 * REQUEST NUMBERS USED ARE:
195 *      01      SCHEDULER      EXECUTION QUANTUM LIMIT.
196 *

198 *
199 ** SHIFT ENTRIES UNTIL THE CORRECT SLOT IS FOUND:
200 TIMLOOP INI      -2,X1          POINT AT THE SLOT TO BE FILLED.
201 TIMMOVE LDAQ    -2,X1
202 STAQ    0,X1
203 LDQ     TIMTEMP
204 ISE     TIMQUEUE,X1
205 AQJ,LT TIMLOOP
206 TIMQSLOT LDAQ    TIMTEMP
207 STAQ    0,X1
208 TIMRET ENI     IMPURE,1
209 TIMSET UJP     IMPURE
210 STI     TIMRET,1
211 STQ     TIMTEMP+1
212 TMQ     CLOCK
213 ASG,S   2          REMEMBER THE INTERRUPT ADDRESS.
214 ENA     2          ALLOW TIME FOR CLOCK TO CHANGE.
215 AQA     2          CALCULATE THE CLOCK MASK.
216 STA     TIMTEMP
217 TMQ     CLOCKLIM
218 LOI     NEXTINT,X1
219 INI     2,X1
220 STI     NEXTINT,X1
221 ISE     TIMQUEUE,X1
222 AQJ,GE TIMMOVE
223 IAM     CLOCKLIM
224 UJP     TIMQSLOT
225 *
226 HOUR    DEC     3600000
227 *          NUMBER OF MILLISECONDS...
228 TOMORROW VFD    A24/IMPURE
229 TIMTEMP  VFD    A24/IMPURE,A24/IMPURE
230 TIMQUEUE VFD    A24/3600000+IMPURE,09/000,A15/TIMHOUR+IMPURE
231 OSS     END    TIMQMAM*2+TIMQUEUE*

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NO LINES WITH ERROR

CLOCK	0J022	20	52 00002P	98 00022P	163 00074P	165 00076P	212 00141P
CLOCKLIM	00032	22	61 00010P	169 00102P	217 00146P	223 00154F	
CLOKIN	E 00000P	50	4 00000P	51 00001P	177 00114P		
CLOTH	00012P	64	59 00006P				
DATE	00037	23	171+1 00104P	171+3 00106P			
DATEB.1	= 00115P	177+1	4+1 00000P	177+4 00120P			
DATEBACK	00106P	171+3	179 00124P				
DAYSCHD	X 10+1	177+6	00122P				
POINT	07773	30	53 00003P				
FINT	07774	31	50 00000P				
FC01	00067P	157	161 00073P				
FC02	00073P	161	152 00063P				
FCLIST	X 11	148	00057P				
FLAGS	X 12	138	00050P				
HOUR	E 00156P	226	5 00000P	149 00060P	164 00075P	167 00100P	
HOURBIT	X 13	137	00047P				
HOURUP	= 00052P	141	6 00000P				
IMPURE	00000	33	54 00004P	96 00020P	103 00027P	105 00030P	177+1 00115P
LATEFLAG	X 13+1	171+7	00112P	228 00157P	229 00160P	229 00161P	230 00162P
NEXTINT	00004P	54	64 00012P	66 00014P	108 00032P	110 00034P	150 00061P
NPAGESM1	X 15	142	00052P				
PAGETIME	X 14	143	00053P	145 00055P			
RATETAB	X 16+2	171+5	00110P				
RETURN	X 16	62	00011P				
SCHDTAB	X 16+1	177+5	00121P				
SHIFTRAT	X 16+3	171+4	00107P				
SYSERR	X 17	116	00042P				
TIMEKILL	= 00030P	105	8 00000P				
TIMHOUR	00047P	136	168 00101P	230 00163P			
TIMHQ	00062P	151	155 00066P				
TIMKLOOP	00016P	94	97 00021P				
TIMKMASK	00046P	121	113 00037P	114 00040P			
TIMKSAVE	00027P	103	107 00031P				
TIMKSPOT	00020P	96	112 00036P	119 00045P			
TIMLOOP	00125P	200	205 00132P				
TIMMOVE	00126P	201	222 00153P				
TIMQMAX	00024	2	231 00164P				
TIMQSLOT	00133P	206	224 00155P				
TIMQUEUE	00162P	230	231 00164P	54 00004P	94 00016P	95 00017P	111 00035P
			117 00043P	151 00062P	204 00131P	221 00152P	115 00041P
TIMRET	00135P	208	210 00137P				
TIMSET	E 00136P	209	7 00000P	170 00103P			
TIMTEMP	00160P	229	100 00024P	118 00044P	203 00130P	206 00133P	211 00140P
TOMORROW	= 00157P	228	9 00000P	177+7 00123P			
X1	00001	34	94 00016P	95 00017P	96 00020P	97 00021P	103 00027P
			108 00032P	109 00033P	110 00034P	111 00035P	112 00036P
			142 00052P	143 00053P	145 00055P	146 00056P	150 00061P
			153 00064P	154 00065P	171+5 00110P	200 00125P	201 00126P
			204 00131P	207 00134P	218 00147P	219 00150P	220 00151P
X2	00002	35	64 00012P	65 00013P	66 00014P	67 00015P	148 00057P
X3	00003	36	159 00071P	160 00072P	161 00073P		157 00067P
			51 00001P	177+1 00115P	177+2 00116P	177+4 00120P	177+5 00121P